Patent

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of: ANN K.B.K. LINDELL et al.	Docket No: ACO 2736 US
Serial No: 09/692,303	Examiner: B. D. Pianalto
Filing Date: October 19, 2000	Group Art Unit: 1762
Title: RADIATION CURABLE HOT MELT COMPOSITION AND A PROCESS FOR THE APPLICATION THEREOF	

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on April 29, 2004

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APPEAL BRIEF

Hon. Commissioner of Patents and Trademarks
Washington, D.C. 20231

I. INTRODUCTION

Pursuant to the provisions of 35 U.S.C. §134 and 37 C.F.R. §§1.191 and 1.192, this paper is submitted as a brief setting forth of the authorities and arguments upon which Appellant relies in support of the October 14, 2003 Appeal from the Final Rejection of Claims 6-17.

II. REAL PARTY IN INTEREST

The real party in interest in the present case is the assignee, Akzo Nobel N.V.

III. RELATED APPEALS AND INTEREFERENCES

Upon information and belief, the applicant/assignee and applicant's/assignee's representative know of no pending or anticipated appeals or interferences which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

IV. STATUS OF THE CLAIMS

Claims 1-17 are pending, claims 1-5 were withdrawn from consideration as being directed to a non-elected invention, and claims 6-17 stand herein on Appeal.

V. STATUS OF THE AMENDMENTS

Subsequent to Final Rejection, an amendment was filed on March 30, 2004 curing certain errors in Claims 11-16.

VI. SUMMARY OF THE INVENTION

The invention of Claims 6-10 and 16-17 relates to a process for coating a substrate to provide a non-tacky protective coating or film thereon (see the paragraph bridging pages 12-13 of the application). It is particularly distinguished by its step of curing to a non-tacky coating solely by radiation (see page 5, lines 22-24). The process comprises the steps of providing a radiation curable hot melt composition (see the paragraph bridging pages 5-6), heating that hot melt composition (see page 7, lines 5-9), applying the hot melt composition to the substrate in the form of a coating or thin film (see the paragraph bridging pages 12-13), and curing of the hot melt to a non-tacky coating solely by exposing the coated substrate to electromagnetic radiation having a wavelength (λ) $\leq$ 500 nm (see page 5, lines 22-24 and page 6, lines 21-25).

The invention recited in Claims 11-15 is a process for coating a substrate to provide a non-tacky protective coating or film thereon (see the paragraph bridging pages 12-13). It is particularly distinguished by its step of heating to an application temperature in the range from 40 to 90°C (see page 7, lines 5-9). The process provides a radiation curable hot melt composition (see the paragraph bridging pages 5-6), heating the hot melt composition to an application temperature in the range from 40 to 90°C (see page 7, lines 5-9), applying the hot melt composition to the substrate in the form of a coating or thin film (see the paragraph bridging pages 12-13), and curing the hot melt by exposing the coated substrate to electromagnetic radiation having a wavelength (λ) $\leq$ 500 nm (page 5, lines 22-24 and page 6, lines 21-25).

VII. ISSUES

There are two issues to be resolved herein on Appeal:

1. Is the rejection of Claims 6-10 and 16-17 under 35 U.S.C. §102(a) as allegedly being anticipated by Bolte in error?; and
2. Is the rejection of Claims 11-15 under 35 U.S.C. §103(a) as allegedly being unpatentable over Bolte in error?

VIII. GROUPING OF CLAIMS

With respect to the first ground of rejection, claims 6-10 and 16-17 stand or fall together. With respect to the second ground of rejection, claims 11-15 stand or fall together.

IX. ARGUMENT

A. Issue 1

Briefly, Claims 6-10 and 16-17 are not anticipated by Bolte because Bolte does not teach at least one of the claimed process steps.

To anticipate a claim, a single source must contain all of the elements of the claim. See, for example, *Hybritech Inc. v. Monoclonal Antibodies, Inc.*, **231 U.S.P.Q. 81, 90 (Fed. Cir. 1986);** *Atlas Powder Co. v. E.I. du Pont De Nemours & Co.*, **224 U.S.P.Q. 409, 411 (Fed. Cir. 1984); and** *In re Marshall*, **198 U.S.P.Q. 344, 346 (C.C.P.A. 1978).**

The Claims at issue are process claims. In this case, anticipation requires that the cited reference teach each step of the claimed process. *Scripps Clinic & Research Found. v. Genentech Inc.*, **18 USPQ2d 1001, 1010 (Fed. Cir. 1991); also see** *Standard Havens Prods., Inc. v. Gencor Indus., Inc.*, **21 USPQ2d 1321, 1328 (Fed. Cir. 1991).**

Independent Claims 6 and 16 each recite "[a] process for coating a substrate to provide a non tacky protective coating or film thereon" which includes providing a hot melt composition and a final step of "curing said hot melt to a non-tacky coating solely by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm."

Bolte does not teach the curing a hot melt to a non-tacky coating solely by exposing the coated substrate to electromagnetic radiation having a wavelength λ of "≤ 500 nm". Instead, Bolte teaches that curing/polymerization, including radiation curing/polymerization, results in a coating with a "soft and sticky" (i.e., a tacky) surface (see Col. 21, lines 16-29 and 50-

58 of the Bolte reference). Bolte teaches that "[I]t is thus "*necessary* for the curing i.e. polymerization stage to occur within an inert atmosphere" to prevent the coating from having a sticky surface. See Col. 21, lines 58-60 of Bolte, emphasis added. Accordingly, Bolte does not teach the claimed step of "curing said hot melt to a non-tacky coating *solely* by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm" (see Claims 6 and 16, emphasis added), because Bolte requires the application of an inert atmosphere, in addition to curing by radiation, to achieve a non-tacky coating. Thus, Bolte cannot anticipate the claimed invention because Bolte does not teach at least one of the claimed steps.

In reply to the above arguments, the Examiner has responded that the "curing in the reference is solely by radiation." See the Final Office Action of October 14, 2003 (the "Final Action"), on page 3. The Examiner apparently ignores the Claim language and the arguments that have been presented. These Claims recite that the hot melt is *cured to a non-tacky coating* solely by radiation, not simply that curing is solely by radiation. Bolte does not teach that curing solely by radiation results in a non-tacky coating as claimed. Accordingly, Bolte does not anticipate the claimed invention.

Finally, the record requires clarification of a statement made by the undersigned's associate Ms. Lainie Parker. In the Final Action, the Examiner ignores the second half of the statement that "although the claims could include a step of subjecting the coating to an inert atmosphere, they cannot include it for the purpose of curing, as required in Bolte". (Response to the Office Action of March 31, 2003, on page 3, in paragraph 1). This is apparent from the Examiner's response that the Claims do not exclude the application of an inert atmosphere and that

applicants have agreed the step could be included in the Claims. (The final Office Action of October 14, 2003, in the paragraph bridging pages 2 and 3).

The Claims require that the *non-tacky coating is achieved solely by curing by radiation.* **Thus, the Claims cannot include a step of subjecting the coating to an inert atmosphere for the purpose of curing to a non-tacky coating, as set forth in the complete statement made by the undersigned and, more importantly, as not taught by Bolte.**

B. Issue 2

Briefly, claims 11-15 are not obvious based on Bolte because Bolte teaches away from the invention claimed therein.

When analyzing an obviousness rejection, a reference must be considered in its entirety including any disclosure therein which teaches away from the claimed invention. See *W.L. Gore & Associates, Inc. v. Garlock, Inc.*, **220 USPQ 303 (Fed. Cir. 1983),** *cert. denied*, **469 U.S. 851 (1984), which is quoted for this rule by MPEP 2141.02. Such disclosure rebuts a prima facie case of obviousness.** *In re Geisler*, **43 U.S.P.Q.2d 1362, 1365(Fed. Cir. 1997) (quoting** *In re Malagri*, **182 U.S.P.Q. 549, 533 (CCPA 1974)). "A reference may be said to teach away when a person of ordinary skill, upon reading the reference, ... would be led in a direction divergent from the path that was taken by the applicant."** *Tec Air, Inc. v. Denso Mfg. Mich. Inc.*, **52 U.S.P.Q.2d 1294, 1298(Fed. Cir. 1999).**

Claims 11-15 recite a step of "heating said hot melt composition to an application temperature in the range from 40 to 90°C." It was argued that Bolte teaches away from this application temperature which is not higher than 100°C. in the Response to the Office Action of March 31, 2003, on page 4. In reply, the

Examiner did not address this argument. The failure of the Examiner to address this argument is inappropriate according to MPEP 707.07(f), but it is understood that such inappropriateness is not a matter before the Board at this time.

According to Bolte, the "*required* application temperatures" are "between +100°C. and 220°C." (Col. 28, ll. 44-48, emphasis added). The claimed application temperature range of from 40 to 90°C is clearly lower than *required* by Bolte. Thus, Bolte teaches away from the claimed invention, which rebuts the Examiner's alleged prima facie case of obviousness.

Indeed, it is disputed that the Examiner has even established a *prima facie* case of obviousness. "To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings." MPEP 706.02(j). See *In re Fritch*, 23 USPQ2d 1780 (Fed. Cir. 1992) (to establish the obviousness of a particular combination, there must be some suggestion or motivation in the prior art). It is submitted that the Examiner has not met this first of the three criteria, because Bolte's requirement of +100°C would not motivate or suggest to the person of ordinary skill in the art to employ a temperature below 100°C, namely in the claimed range of 40°C to 90°C.

X. CONCLUSION

In view of the arguments presented in this Appeal Brief, the appellant respectfully submits that Claims 6-17 stand improperly rejected over the applied art. The Board is therefore

respectfully requested to reverse the Examiner and pass claims 6-17 to issue.

Respectfully submitted,

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XI. APPENDIX

CLAIMS

6. A process for coating a substrate to provide a non tacky protective coating or film thereon, said process comprising the steps of:

i) providing a radiation curable hot melt composition comprising a) 20 to 100 wt.% of a radiation curable resin or a mixture of radiation curable resins having a viscosity in the range from 15 to 10,000 mPas in the temperature range from 40 to 150°C, b) 0 to 50 wt.% of a hydroxyfunctional resin or oligomer or a mixture of hydroxyfunctional resins or oligomers, c) 0 to 10 wt.% of a photoinitiator, d) 0 to 50 wt.% of fillers and/or additives, and e) 0 to 40 wt.% of pigment, wherein the total amount of components a) to e) adds up to 100 wt.%,

ii) heating said hot melt composition to a temperature in the range from 40 to 150°C,

iii) applying said hot melt composition to the substrate in the form of a coating or thin film, and

iv) curing said hot melt to a non-tacky coating solely by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm.

7. The process according to claim 6, wherein the substrate is a heat-sensitive substrate.

8. The process according to claim 7, wherein the substrate contains cellulose and/or plastic and the hot melt composition is heated to a temperature in the range from 40 to 100°C.

9. The process according to claim 6, wherein the hot melt composition comprises a resin or a mixture of resins with a T_g below 0°C.

10. The process according to claim 6, wherein the hot melt composition comprises a polyesteracrylate resin.

11. A process for coating a substrate to provide a non tacky protective coating or film thereon, said process comprising the steps of:

i) providing a radiation curable hot melt composition comprising a) 20 to 100 wt.% of a radiation curable resin or a mixture of radiation curable resins having a viscosity in the range from 15 to 10,000 mPas in the temperature range from 40 to 150°C, b) 0 to 50 wt.% of a hydroxyfunctional resin or oligomer or a mixture of hydroxyfunctional resins or oligomers, c) 0 to 10 wt.% of a photoinitiator, d) 0 to 50 wt.% of fillers and/or additives, and e) 0 to 40 wt.% of pigment, wherein the total amount of components a) to e) adds up to 100 wt.%,

ii) heating said hot melt composition to an application temperature in the range from 40 to 90°C,

iii) applying said hot melt composition to the substrate in the form of a coating or thin film, and

iv) curing said hot melt by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm.

12. The process according to claim 11 , wherein the substrate is a heat-sensitive substrate.

13. The process according to claim 12, wherein the substrate

contains cellulose and/or plastic and the hot melt composition is heated to a temperature in the range from 40 to 100°C.

14. The process according to claim 11, wherein the hot melt composition comprises a resin or a mixture of resins with a T_g below 0°C.

15. The process according to claim 11, wherein the hot melt composition comprises a polyesteracrylate resin.

16. A process for coating a substrate to provide a non tacky protective coating or film thereon, said process comprising the steps of:

i) providing a radiation curable hot melt composition comprising a) 40 to 90 wt.% of an ultraviolet radiation curable polyester acrylate resin having a viscosity in the range from 15 to 10,000 mPas in the temperature range from 40 to 150°C, b) 0 to 50 wt.% of a hydroxyfunctional resin or oligomer or a mixture of hydroxyfunctional resins or oligomers, c) 0 to 10 wt.% of a photoinitiator, d) 0 to 50 wt.% of fillers and/or additives, and e) 0 to 40 wt.% of pigment, wherein the total amount of components a) to e) adds up to 100 wt.%,

ii) heating said hot melt composition to a temperature in the range from 40 to 150°C,

iii) applying said hot melt composition to the substrate in the form of a coating or thin film, and

iv) curing said hot melt to a non-tacky coating solely by exposing the coated substrate to electromagnetic radiation having a wavelength $\lambda \leq 500$ nm.

17. The process according to claim 16, wherein the hot melt composition further comprises a UV curable polyurethane acrylate resin and/or a UV curable epoxy acrylate resin.